Assembling and Presenting Watershed Process Models for Evaluating Future Land Use

Paul Nelson
Kitsap County Natural Resources, Department of Community Development

Susan Graham
Parametrix

Abstract
Cumulative affects associated with sprawl-type development patterns are overwhelming water quality and aquatic and terrestrial habitat protection efforts. Effective aquatic resource protection and restoration efforts will need to be planned at the watershed-scale. The Chico watershed is one of Kitsap County's most productive salmon bearing streams. Without adequate assessment and planning, the environmental infrastructure of such watersheds (i.e. stream-sides, estuaries, floodplains, fish rearing habitats, etc.) is usually severely degraded.

The *Alternative Futures Approach* includes the systematic assessment, design, and evaluation of future land and water use scenarios for a particular geographic area/ watershed. The approach is intended to help local governments simplify the task of integrating numerous land use planning and aquatic and terrestrial habitat protection objectives (per CWA, ESA, Growth Management Act, Shoreline Management Act revisions, etc...) into a more coherent and technically grounded vision of the future of the watershed. The approach provides a watershed-based and community accessible framework without being prescriptive.

In the Chico watershed, water quality, water quantity, aquatic terrestrial habitat protection, and community infrastructure investment priorities will be evaluated across a range of future land use scenarios. The panel will present the range of technical analysis that were used in the Chico pilot project to help define the types of information and analysis available to local jurisdictions attempting to develop smarter growth and development patterns, resulting in more effective watershed protection and restoration efforts.

Introduction
In January 2001, the Kitsap County Department of Natural Resources began a pilot project in the Chico Creek Watershed that was designed to change the way the county works with local residents to plan for development in their watersheds. The Chico Watershed "Alternative Futures" analysis is a natural resource assessment approach for guiding community planning and natural resource protection.

Alternative Futures
This report documents the Alternative Futures planning process for the Chico Watershed. Alternative Futures Planning is a technique designed to assess the relationships between human activities and changes that occur in the natural environment (Hulse 2000). This method consists of creating a series of future scenarios that depict what the landscape of a watershed might look like in the future. Each scenario is then analyzed for its effect on water quality, water quantity and fish and wildlife habitat. The analysis also assesses the potential benefits and impacts of those future land use scenarios. The result is a watershed plan based on natural resource protection and designed around a vision of the future that is articulated by the citizens of the watershed. Kitsap County selected the Chico Creek Watershed as a pilot project for Alternative Futures planning due to its healthy salmon runs, large tracts of forestland, two large lakes, and the increasing demands of development within its boundaries. Once alternative futures are identified and analyzed for Chico, the next step will be to complete a Subarea plan to be incorporated into the County's Comprehensive plan. In Kitsap County, Subarea plans have traditionally been created around jurisdictional boundaries or Urban Growth Areas (UGAs). In this case, instead of a political boundary, the natural topography of the land is used to bound land-use change and to analyze the effects of this change on the natural function of the watershed. The result will be a plan that identifies and addresses impacts in a more comprehensive fashion, and is a truly collaborative effort involving area residents, natural resource agencies, city, county and tribal governments, and numerous other stakeholders interested in responsible stewardship of the watershed they share.

Chico Watershed Description

The Chico watershed drains 16.3 square miles of land to the western shores of Dyes Inlet in Kitsap County. Chico Creek is fed by four main tributary streams: Kitsap, Dickerson, Lost and Wildcat Creeks. The watershed contains Kitsap and Wildcat Lakes, two hydrologically and ecologically important lakes that help regulate the hydrology of the stream network (May 2002). The watershed drains 68 miles of streams, 17 of which provide spawning and rearing habitat to salmon. According to long-term data, this watershed has been the most productive salmon system on the Kitsap Peninsula for several decades (WCC 2000). Over the past hundred years, trees have been harvested and property in the Chico watershed has been developed, with most of this development occurring around Kitsap and Wildcat lakes and the lowest two miles of Chico Creek. Currently, the watershed is about 70% forested, most of which is owned and managed by Port Blakely Tree Farms and the Department of Natural Resources as commercial forest.

Outreach and Involvement

The emphasis of this report is the work done through the Watershed Advisory Committee. However, in order to provide context for their work, it is important to consider all of the various teams that contributed to the Chico Watershed planning effort. Each of these groups worked under unique objectives, roles and responsibilities that fit into the larger planning effort.

Chico Advisory Team

The Chico Advisory Team (CAT) was originally formed in 2001 and serves as the primary coordinating body for the project. The team was responsible for assisting the Watershed Advisory Committee and the County's Department of Community Development in the creation of a Watershed Protection and Management Plan for the Chico Creek Watershed. The team was comprised of individuals from Kitsap County Department of Community Development, the Puget Sound Water Quality Action Team, the US Environmental Protection Agency and the Washington State Department of Community, Trade and Economic Development.

Specific tasks from the Chico Advisory Team include:

- Develop a current assessment of the Chico Watershed.
- Develop a public education/involvement program to support the planning effort.
- Create and analyze alternative futures of the watershed.
- Recommend necessary actions to complete a subarea plan and achieve the desired alternative.
- Incorporate a plan to monitor watershed conditions and modify actions as necessary to bring about the desired result.

Working Groups

Four "Working Groups" were created to address specific elements of watershed planning. The groups were comprised of scientists and educators from various Federal, State and local agencies.

Education Working Group

The Education Working Group convened in July 2001 to gather resources and develop a plan for providing education opportunities to Chico Watershed residents. This group was assigned the following responsibilities:

- Make watershed residents aware of the planning that is taking place and how this effort relates to other water resource planning activities in the area.
- Motivate watershed residents to be involved in watershed protection and planning.
- Educate residents, businesses and appointed or elected officials about watershed processes by presenting interpretations of GIS, modeling and monitoring analysis.
- Provide techniques, tools and alternative methods and management practices that minimize effects on watershed processes.
- Provide understanding of the opportunities and limitations that exist for them to influence the process of planning for the future of their watershed.

A major component of the Education Working Group's efforts was the creation of the Watershed Academy, which was designed to educate the Chico Watershed Advisory Committee so that they would have the baseline understanding needed for their role in Alternative Futures planning. A more detailed discussion of the topic areas is included in the following pages.

Public Involvement Working Group

The Public Involvement Working Group encouraged people to participate in developing and assessing alternative future development scenarios, and developing a plan for achieving elements of those scenarios. Group responsibilities include:

- Provide watershed residents a forum to participate in the planning of their watershed,
- Facilitate the development and review of alternative futures
- Act as a liaison between public participants and the technical working group.

Technical Working Group

The Technical Working Group began meeting in March 2001. This group supported the Education and Public Involvement Working Groups by developing the "tools" necessary to describe the Chico Creek Watershed in the future. The tools help develop a science-based vision of what the watershed might look like and how it might function in the coming years. After evaluating effects of the various scenarios on the watershed's natural resources, the group presented the results to the Watershed Advisory Committee. The Technical Working Group was charged with the following responsibilities:

- Identify and complete necessary and feasible technical tasks for the Chico Creek watershed assessment.
- Provide technical advice and products to the CAT, the public, the Board of County Commissioners and other working groups.
- Run analysis on proposed alternative scenarios.
- Incorporate a monitoring program that will meet the County's criteria for adaptive management.

Restoration Working Group

The Restoration Working Group developed a plan to restore the lower Chico Creek to naturally sustainable spawning habitat for the Chum Salmon.

Watershed Academy

The Watershed Academy, a 27-hour curriculum, took place during the summer of 2002. The primary objective of the course was to provide education and background on watershed and planning processes, so that the Watershed Advisory Committee would have an informed background from which to begin the planning process. All potential volunteers on the Advisory Committee were required to complete the course, which included the following components:

- Introduction to Hydrology—Describing the hydrologic cycle, watershed functions and processes.
- Soils and Vegetation—Types and characteristics of soils and vegetation native to Kitsap County.
- Surface Water and Groundwater—Formation, classification and function of streams, lakes and wetlands in Kitsap County, as well as an introduction to groundwater and Kitsap area aquifers.
- Water Quantity and Quality –Stream flow, water use, sources of contamination and current conditions in the County.
- Wildlife, Forest Ecology and ESA–Introduction to wildlife habitat and corridors, forest ecologic functions, and the Endangered Species Act.
- Short Course in Local Planning–Legal and practical objectives for planning, the Growth Management Act, and local land use planning processes.
- Alternative Futures—Introduction to the concept, the analysis procedures and presentation of the Planned Trend scenario.
- Low Impact Development—What is Smart Growth? What is Low Impact Development? How and when should they be applied?

Watershed Advisory Committee

The Watershed Advisory Committee is comprised of citizens and stakeholders who utilize the watershed's resources. The group met regularly to discuss the numerous issues involved in developing future scenarios. Members were asked to commit to the full schedule of meetings, and to participate in a collaborative manner. The group included watershed residents and representatives from the City of Bremerton, The Great Peninsula Conservancy (Land Trust), Kitsap Alliance of Property Owners, Mountaineers Foundation, Port Blakely Communities and the Suquamish Tribe. Staff support was critical to the successful workings of the Committee. Kitsap County Department of Community Development staff played integral roles in facilitation, leadership, and data gathering needed to move the process forward in an efficient and thoughtful manner.

Goals

Early in 2002, the Kitsap County Board of Commissioners called for volunteers to participate on the Chico Watershed Advisory Committee. Potential committee members were asked to attend the Watershed Academy, to develop future scenarios for the watershed landscape, and to be a voice for the community. Once the committee was formed, the Commissioners drafted a memorandum outlining the Board's expectations of the Advisory Committee. These expectations included the Committee's responsibility to create a plan that:

- Protects and restores watershed function.
- Maintains the natural hydrologic cycle.
- Achieves water quality standards.
- Conserves wildlife habitat.
- Supports and enhances existing communities.
- Establishes a predictable pattern for growth and development.
- Considers community character.
- Uses best available science.
- Meets Growth Management Act and other planning requirements.
- Can be a model for watershed planning efforts in other watersheds in Kitsap County.

Early on in the planning process, the Advisory Committee was asked to create a list of goals and objectives for their work, in order to ensure that the resulting scenarios fell within an agreed-upon set of criteria. Rather than create a new list of criteria, the Committee decided to use the Board of Commissioners' mission statement, which is outlined above. These became the foundation for the decisions and discussions that ensued.

Through the Fall and Winter of 2002, the Watershed Advisory Committee (WAC) held eleven meetings. The meetings were intended to guide the general progress on the Watershed Alternative Futures development process, and to address specific issues associated with each of the possible scenarios

Mission

The WAC was asked create two potential future alternatives, as well as review the "Planned Trend" (what would occur under current land use and zoning regulations as per the County Comprehensive Plan). The group decision-making process was eased considerably knowing that the goal was to create potential scenarios, but not to formulate a preferred one at this stage of planning. The task was to uncover opportunities and implications of various levels of conservation or development. However, the Committee was aware that their recommendations would be the core of the next step—the Subarea Plan—and that during that process, consensus on a preferred plan would be required.

Originally, the WAC was tasked only with reviewing the Planned Trend, and developing two future scenarios: one focused on conservation, and one on development. However, after much discussion over the need to create a scenario that was more reasonable than either of these two "extremes", the Committee decided to create two scenarios considered to be the "bookends of conservation and development" and then create a third new scenario that would accommodate both development and watershed protection.

Four Alternative Futures

The WAC considered four potential watershed alternatives: Planned Trend, Development, Conservation, and Moderate. These are depicted in planning designation maps on the following pages. This section also includes an overview of how each scenario was developed, along with assumptions made during the development process.

Planned Trend Scenario

The Planned Trend Scenario essentially builds on present development patterns and existing land development regulations. This scenario assumes full "build-out" in allowed areas within the Chico Watershed under current regulations and existing zoning. Intended to illustrate what would happen if current plans became future realities, this alternative attempts to show the full effects that existing regulations will have on the overall health of the watershed.

Analyzing this scenario assumes that future trends are similar to current practices. This means, rules and regulations pertaining to urban and rural development and zoning do not change. The Bremerton Urban Growth Area (UGA) boundary also remains unchanged. The Planned Trend provides the basis for the creation of the other alternatives, serving as a "baseline conditions" scenario, which can be modified to generate and study other potential alternatives.

After reviewing the Planned Trend, the Committee felt it actually represented a "worst case" scenario for the watershed, and that if development occurred under existing patterns, the watershed would suffer adverse impacts. Later analysis would prove this to be a valid concern.

Development Scenario

The Development Scenario is the most aggressive in terms of urban and rural growth. The Committee spent a relatively short amount of time developing this scenario, because they did not intend for this "extreme" to represent a reasonable future for the watershed. However, they did feel that it was important to develop and describe this alternative, in order to understand how to develop a more balanced future alternative. In this scenario, the UGA boundary is assumed to expand to include the Seabeck Highway corridor; the newly added land was assumed to be zoned for low-density residential uses. Concurrently, all Forest Resource and Interim Rural Forest lands would be rezoned as "Rural Residential." It was assumed that both urban and rural zoning densities would increase to the maximum levels allowed by GMA. While an industrial park and commercial area is planned west of Kitsap Lake, in this scenario, commercial and business park development would also occur between Wildcat and Kitsap lakes on the south end of Camp Wesley Harris and near Chico Bay. The Bremerton UGA would expand, and the City's minimum allowable buffer width for development near Critical Areas—less strict than the County's requirement—would be applied throughout the watershed. Increased development would be encouraged through a number of changes to rules and regulations. In this scenario, public funds could be used to subsidize private development outside UGA boundaries, and provisions for the "Transfer of Development Rights" (TDRs) are not accommodated. Land conservation incentives would roll back, landowners devoting easements for conservation purposes could be given smaller tax deductions, and property owners would not be compensated for protecting Critical Areas.

Conservation Scenario

The Conservation Scenario seeks to minimize impacts on the natural environment by reducing the amount of future land development and concentrating development in areas that are least sensitive to land-use change. The Committee spent a relatively short amount of time developing this scenario, because they did not intend for this "extreme" to represent a reasonable future for the watershed. However, they did feel that it was important to develop and describe this alternative, in order to understand how to develop a more balanced future alternative. Under this alternative, today's Federal and State regulations including the ESA and GMA do not change. Chico Creek is assumed to remain ESA-listed, applying established environmental regulations. Contrary to the Development Scenario, neither the UGA nor the City of Bremerton limits would expand. Under this scenario, the County would apply a "use it or lose it" timeframe for land development within the UGA, after which the land would revert to underlying zoning. Transfer of Development Rights (TDRs), which allows for transferring development away from sensitive lands to designated "receiving" areas, would be possible in this scenario. Incorporated into the program would be a "forest land of long-term significance" designation that precludes any dwelling units on those lands. The Committee is cautious about a Transfer or Purchase of Development Rights (PDR) program. There is not sufficient study to indicate if such programs could be successful in the watershed or in the county. The Committee endorses further research into the effectiveness and feasibility of TDR and PDR as a means to protect the watershed. This alternative would aggregate contiguous undeveloped lots under a single ownership. This reduces the number of new units regardless of land use designation. This was deemed possible, since most of the large lots (ten or more acres) are currently under ownership by just a few entities. Several provisions and incentives would promote the conservation of the watershed's natural resources under this alternative, including a Critical Areas overlay that would preclude development within certain priority areas, and the "Reasonable Use" exceptions would be eliminated from the County's Critical Areas Ordinance. Compensation may be provided to property owners who protect Critical Areas. Included in this provision is a County "buy-out" program for high-priority lands in sensitive areas.

Other incentives could include tax reductions for property owners who devote easements for conservation purposes, and recognizing and promoting builders for extraordinary conservation efforts ("Green Star" program). This scenario assumes that the City of Bremerton is subject to Kitsap County's buffer requirements, which are stricter than the City's. Both the City and County would be expected to use Best Available Science approaches on the issue of buffers. The Conservation Scenario contains several infrastructure elements, including a County managed septic pumping maintenance program, and stormwater infiltration would occur on-site wherever possible. In addition, transportation design is encouraged to minimize the amount of impervious surface area through techniques like "skinny streets". Existing codes would need to be revised in order to allow for such policies to exist.

Moderate Scenario

After creating the "bookend", or extreme alternatives, the Committee spent considerable time discussing a moderate approach—one that balanced the need for protecting the natural resources that make Chico special, while recognizing that some level of development will occur over time. This alternative was meant to reflect a potential *reality* for the watershed. Although not the Committee's "preferred" alternative, the Moderate Scenario does represent the Committee's recommendation as a starting point for further refinement during SubArea planning. The Moderate Scenario seeks to minimize impact on the natural environment while allowing for growth in areas that could accommodate it. In areas designated for potential future growth, low-impact development practices would be encouraged. As in the other scenarios, present ESA and GMA regulations remain the same.

There are five specific discussion or planning areas within the Moderate Scenario. These include designated wildlife corridors, Rural Development Transition Areas, the Bremerton UGA, addressing the Interim Rural Forest designation, and a potential Limited Area of More Intense Rural Development (LAMIRD) at Wild Cat Lake. These are described in more detail in the following paragraphs, and are highlighted on the following maps.

Wildlife Corridors

The Chico Wildlife Corridors comprises a critical portion of the watershed in terms of habitat, with an area of around two square miles. The purpose of the corridor is to connect large "patches" of viable breeding and foraging habitat for numerous species. Based on results from the wildlife analysis, two areas were identified as important pathways for the movement of wildlife through the Chico watershed. One area runs north and south down the center of the watershed, connecting forested wetlands in the north to large patches of forested land in the center of the watershed. The other corridor connects the forested wetlands at the south end of Kitsap Lake to the large forested patches owned by the City of Bremerton in the Gorst creek watershed. These areas were considered crucial to the watershed's ability to support long-ranging wildlife species.

Most of the land within the corridors is undeveloped, with only a handful of existing homes currently in existence. The Committee would hope to limit future development within the corridor, and minimize impacts of existing development through a property owner education program, promoting living responsibly as environmental stewards within the Wildlife Corridor. Creation of a wildlife passage culvert under Seabeck Highway along the northern corridor could help protect wildlife and increase function of the corridor itself. This would be a possible "sending" area for a TDR program, or a designated priority purchase area for a PDR program.

Rural Development Transition Areas

In recognition of the balanced growth/protection goal, the Committee was asked to designate areas that could potentially support future development within the watershed. As part of this exercise, they considered the existence of urban services (water, sewer or septic, roads), existing development patterns, and locations and land use densities that would be feasible from a market/economic standpoint. Rhododendron Heights, located along Seabeck Highway between the Bremerton city limits near Kitsap Lake, and Wildcat Lake, was considered to be a possible site. The area is currently zoned Rural Residential (one unit per five acres), but is developed closer to one unit to two aces. The Committee would consider pursuing a Rural Development Transition zoning of one unit to two and a half acres, although it is not fully understood if the Growth Management Act would recognize such zoning. Further exploration into the zoning is required before pursuing this option, and the Committee recommends that this be addressed during the SubArea planning process. If so designated, this area could potentially serve as a "receiving" area in a TDR program.

Bremerton Urban Growth Area (UGA)

The UGA boundary would not expand in the Moderate Scenario. Within the UGA, an Urban Conservation Overlay would be established for all parcels within 200 feet of Chico Creek (below the Navy railroad tracks). Agencies could potentially offer tax incentives for new development and redevelopment within the overlay that is deemed "low impact". Additional work on the specific policies and regulations within the UGA would be jointly explored with the City of Bremerton, who will be critical in creation of a SubArea Plan.

Interim Rural Forest Lands

During the development of the County Comprehensive Plan, an Interim Rural Forest designation was created. The designation was intended to address forestlands that were being commercially farmed, but were not considered to be of long-term commercial significance. This designation has an underlying land use zoning of one unit per 20 acres. The Committee did not create a permanent zoning option for these Interim lands, which represent about 2500 acres in the watershed. However, it is the Committee's hope that this will be reviewed and addressed by the County on a larger,

countywide scale, which could possibly be incorporated in the Chico Subarea Plan. The Committee identified this land as important because it contains much of the watersheds best fish and wildlife habitat, and many of the designated Interim Forest lands fall within the Chico Wildlife Corridor. For those properties, the criteria that are associated with the Corridor would apply to those parcels. It is also possible that Interim areas could be re-zoned to another existing or new Forest designation that would preclude or reduce development potential. These lands would be candidates as "sending" areas for transferring development rights, or as priority buy-out areas for purchasing those rights.

Wildcat Lake LAMIRD

Wildcat Lake, located in the northwest corner of the Chico Watershed, is currently developed at a level greater than its' rural residential designation. This area could be considered under the Growth Management Act as a "Limited Area of More Intense Rural Development" or LAMIRD. Encompassing properties adjacent to and near the lake, this designation status acknowledges existing development patterns and provides the groundwork for planning for new growth. The Committee assumed that the criteria include low-impact development standards. However, the specific details of the LAMIRD, including boundary definition, zoning designations, development criteria and whether or not Wildcat Lake is suitable to be considered as such, would be defined during the Subarea planning process.

After creating the various scenarios, the land use and planning designation maps, along with their pertinent assumptions, were forwarded to the technical team for analysis. This group of scientists and natural resource planners took the data provided and analyzed each scenario for it's impact on water quality, water quantity, and fish and wildlife habitat. The team also compiled data on impervious surface area, forest lands, zoning designations, dwelling unit counts, and potential population.

Technical Analysis

The Technical Working Group used a variety of analysis tools and techniques to describe how the alternative scenarios would affect the natural function and resources in the Chico watershed. Analysis of terrestrial habitat (Linders and Wilhere 2003), geomorphology (Segura-Sossa et al. 2003), water quality, water quantity and riparian processes (Roberts 2003) and aquatic species habitat (Nelson 2003) provide a broad description of the effects of alternative future development scenarios on the natural resources of the Chico Creek watershed.

Land-use Change

Land-use change was quantified using GIS tools to determine the change in the number of units available and the anticipated change in impervious area associated with development patterns in each scenario. This simple calculation points out the fact that both the Conservation and Moderate approach create less impervious area than the Planned Trend, and the Moderate approach achieves this while still allowing for nearly all the units allotted for in the Planned Trend. Simply stated, both alternative futures provide more protection against the effects of impervious surfaces than the County's current plan for the watershed. This theme holds true for analysis of water quality, water quantity, fish and wildlife habitat.

Scenario	Current	Planned Trend	Conservation	Moderate	Development
Units	1,300	5,050	2,600	4,900	25,000
% Impervious	7.2	10.4	8.8	9.2	21.6

After creating assumptions for each scenario and debating the practicality of the alternative futures, the WAC decided to drop the Development scenario from the list of futures to be analyzed. They felt this scenario was too far fetched to ever become a reality and that the technical group's time would be better spent analyzing the other scenarios. It was decided to use the Planned Trend scenario to represent the highest potential development. However, some analysis of the Development scenario was completed, including its effects on water quality, water use and hydrology. It was not analyzed for impacts to fish or wildlife habitat.

Lessons Learned

The Chico Watershed Alternative Futures project represents both an ending and a beginning. We end with four potential future landscapes for the watershed and many different possibilities for how a preferred one will both be developed and implemented. The Advisory Committee officially ends its work, yet many members will continue through the next phase. The county, with experience gained, will use the process as a model for future basin planning. So what lessons were learned through the course of this phase? What would we definitely do the same, and what things would certainly be different? The following are thoughts to consider:

- The Watershed Academy, which provided a basic level of understanding for committee members, was critical in helping people understand the aspects of watershed planning, familiarize themselves with new technical terminology, and establish a foundation of general knowledge.
- An Advisory Committee should ideally be between 9 and 12 members, and each member should commit to attending and participating throughout the entire process. At least 10 and possibly up to 15 meetings are needed in order to adequately address the numerous issues that will arise throughout the process.
- Assuming a weekly meeting schedule at least 3, preferably 4, months are needed to accommodate the meetings and future scenario development process. This pilot program has taught us that it is best to integrate alternative futures planning into the Subarea process, as Phase 1 of a two-phase approach. Ideally, the first phase should flow seamlessly into the second, with little or no separation between the two.
- The Planned Trend should be completed by staff prior to convening the Committee, so a baseline condition is established.
- The Committee should allow time to create "bookends," for the conservation and development scenarios relatively early in the process, but allow the most time for creation of a Moderate, or balanced, scenario that they believe is feasible and represents a reality that could occur.
- Staff time should be devoted for creation of land use maps for each scenario, and brought to the Committee in draft form, for the Committee's review and discussion. It was difficult to create these maps in real time during committee meetings, but much was accomplished with staff-prepared drafts.
- A technical presentation workshop should take place prior to completing the Moderate scenario. This would allow results from analysis of the other scenarios to be incorporated into the Moderate scenario. The workshop should close with a session that identifies points of discussion to be taken into the Subarea Planning process.
- The Watershed Advisory Committee should act as the citizen committee during Subarea Planning meet all the requirements of GMA and ultimately develop a subarea plan for the watershed.

Conclusions

Kitsap County and the Watershed Advisory Committee are committed to moving beyond the Alternative Futures process and directly into Subarea planning for the Chico Watershed. The County intends to hold a public open house to present the process and recommendations outlined in this report. This open house could also serve as a scoping meeting to initiate the SEPA "non-project" level of environmental documentation that will need to be completed for the Subarea Plan. Following an open house, the County would continue to work with the Committee to develop the final plan. It is anticipated that such a process could take between six and twelve months to complete. The County is currently exploring funding opportunities that would allow for the continuation of the process.

Acknowledgments

David Nash with Kitsap County GIS created the scenario maps and provided analysis of land use, which was the main source of data for all the technical analysis associated with this project. The Watershed Advisory Committee consisted of nine dedicated citizens who volunteered over 50 hours of their time to create the scenarios and assumptions for the Chico project. Members of the Education, Public Involvement, Technical and Restoration Working Groups each had essential roles in the completion of this project and are due the highest accolades and appreciation.

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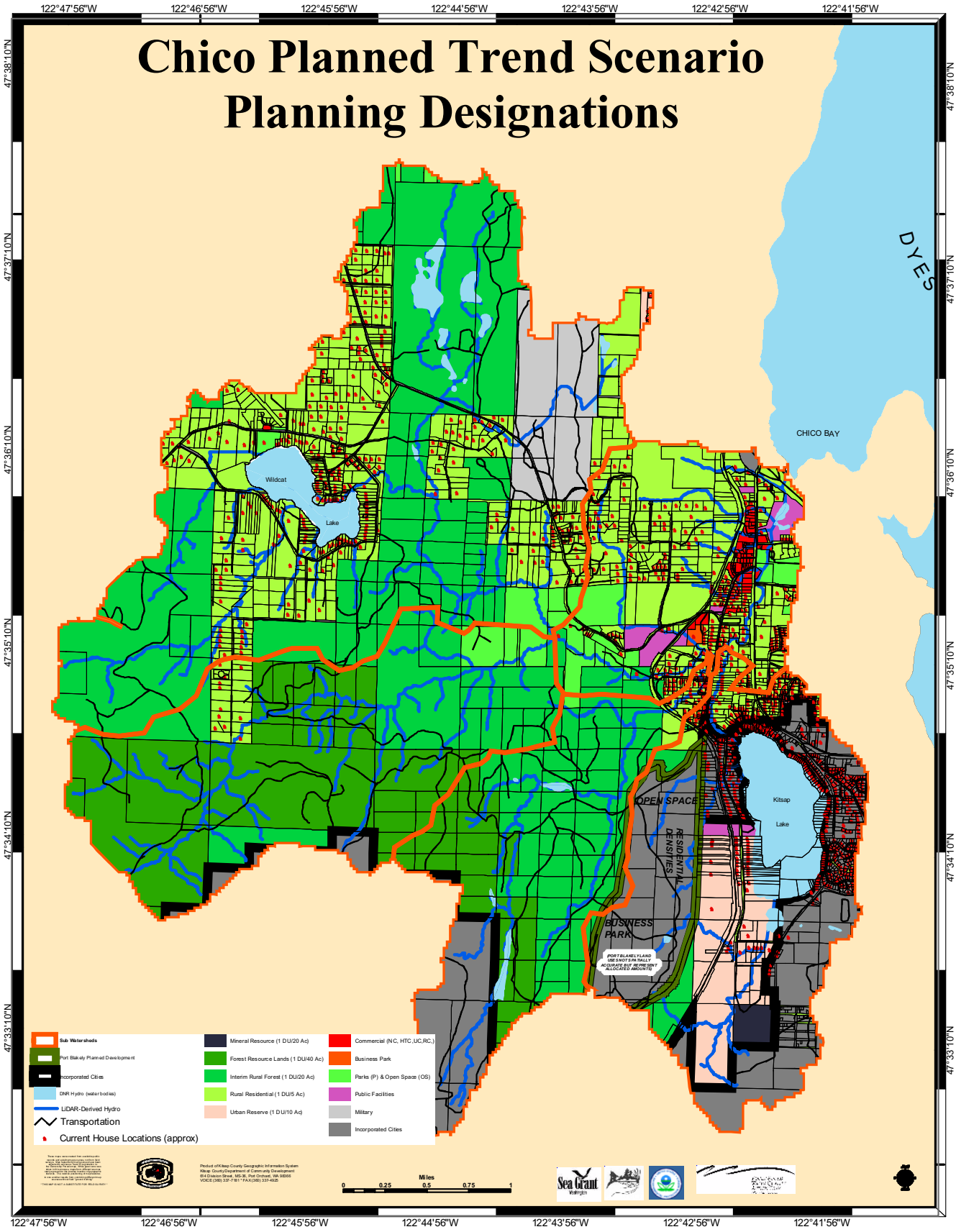
Chico Planned Trend Scenario
Planning Designations
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122°42'56"W
122°41'56"W
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DYES
CHICO BAY
Wildcat
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Lake
OPEN SPACE
RESIDENTIAL DENSITIES
BUSINESS PARK
PORT BLAKELY LAND USE IS NOT S PA TIALLY ACCURATE BUT REPRESENT ALLOCATED AMOUNTS)
Sub Watersheds
Port Blakely Planned Development
Incorporated Cities
DNR Hydro (water bodies)
LiDAR-Derived Hydro
Transportation
Current House Locations (approx)
Mineral Resource (1 DU/20 Ac)
Forest Resource Lands (1 DU/40 Ac)
Interim Rural Forest (1 DU/20 Ac)
Rural Residential (1 DU/5 Ac)
Urban Reserve (1 DU/10 Ac)
Commercial (NC, HTC,UC,RC,)
Business Park
Parks (P) & Open Space (OS)
Public Facilities
Military
Incorporated Cities
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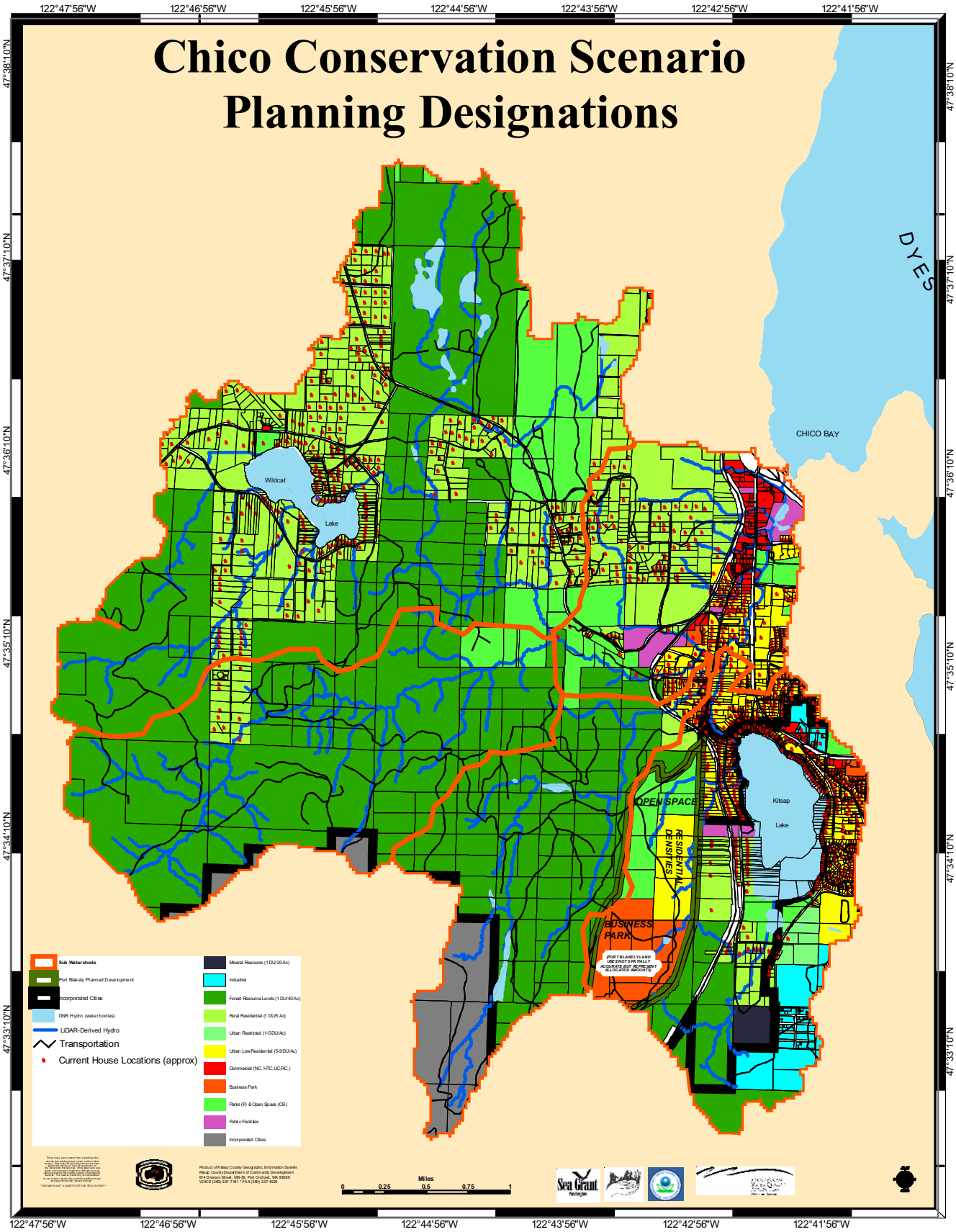
Chico Conservation Scenario
Planning Designations
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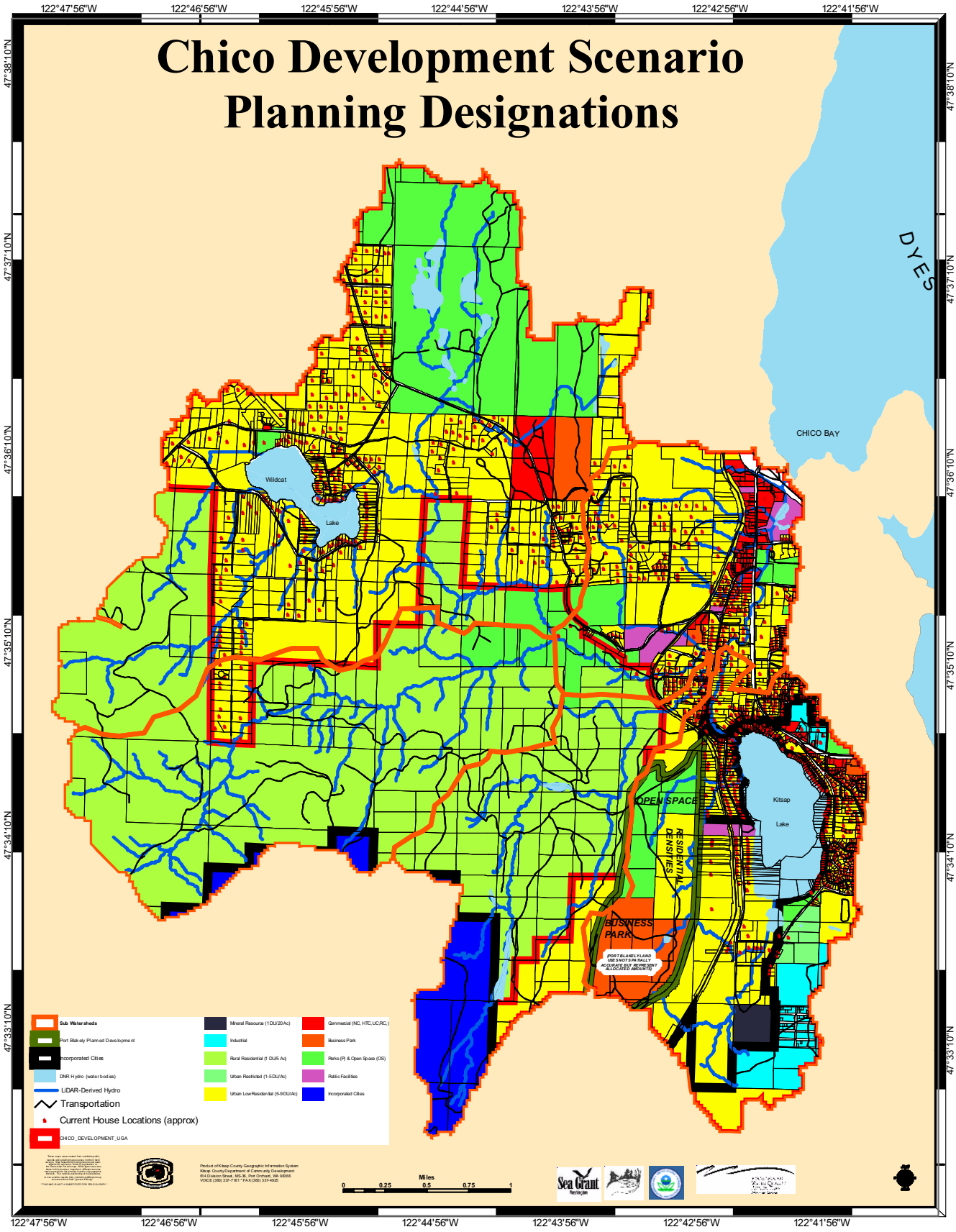
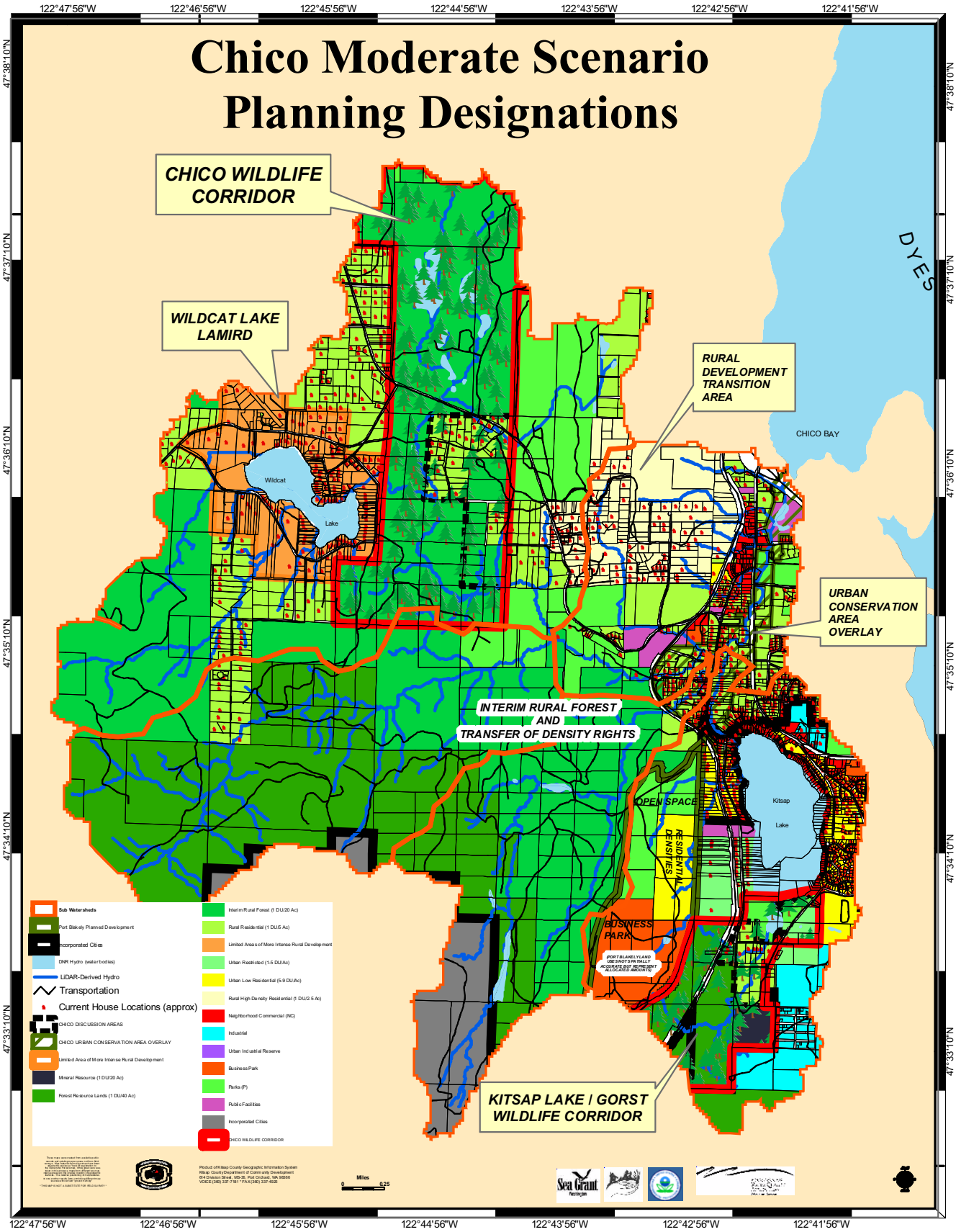
Current House Locations (approx)
Mineral Resource (1 DU/20 Ac)
Industrial
Forest Resource Lands (1 DU/40 Ac)
Rural Residential (1 DU/5 Ac)
Urban Restricted (1-5 DU/Ac)
Urban Low Residential (5-9 DU/Ac)
Commercial (NC, HTC, UC, RC,)
Business Park
Parks (P) & Open Space (OS)
Public Facilities
Incorporated Cities
Product of Kitsap County Geographic Information System
Kitsap County Department of Community Development
614 Division Street, MS-36, Port Orchard, WA 98366
VOICE (360) 337-7181 * FAX (360) 337-4925
Miles
0
0.25
0.5
0.75
1


Chico Development Scenario
Planning Designations
122°47'56"W
122°46'56"W
122°45'56"W
122°44'56"W
122°43'56"W
122°42'56"W
122°41'56"W
47°38'10"N
47°37'10"N
47°36'10"N
47°35'10"N
47°34'10"N
47°33'10"N
DYES
CHICO BAY
Wildcat
Lake
Kitsap
Lake
OPEN SPACE
RESIDENTIAL DENSITIES
BUSINESS PARK
PORT BLAKELY LAND USE IS NOT S PA TIALLY ACCURATE BUT REPRESENT ALLOCATED AMOUNTS)
Sub Watersheds
Port Blakely Planned Development
Incorporated Cities
DNR Hydro (water bodies)
LIDAR-Derived Hydro
Transportation
Current House Locations (approx)
CHCO_DEVELOPMENT_UGA
Mineral Resource (1 DU/ 20 Ac)
Industrial
Rural Residential (1 DU/5 Ac)
Urban Restricted (1-5DU/Ac)
Urban LowResidential (5-9 DU/Ac)
Commercial (NC, HTC, UC,RC,)
Business Park
Parks (P) & Open Space (OS)
Public Facilities
Incorporated Cities
Miles
0
0.25
0.5
0.75
1
Sea Grant


Chico Moderate Scenario
Planning Designations
CHICO WILDLIFE CORRIDOR
WILDCAT LAKE LAMIRD
RURAL DEVELOPMENT TRANSITION AREA
URBAN CONSERVATION AREA OVERLAY
INTERIM RURAL FOREST AND TRANSFER OF DENSITY RIGHTS
KITSAP LAKE / GORST WILDLIFE CORRIDOR
OPEN SPACE
RESIDENTIAL DENSITIES
BUSINESS PARK
PORT BLAKELY LAND USE IS NOT SPATIALLY ACCURATE BUT REPRESENT ALLOCATED AMOUNTS)
CHICO BAY
DYES
Wildcat
Lake
Kitsap
Lake
122°47'56"W
122°46'56"W
122°45'56"W
122°44'56"W
122°43'56"W
122°42'56"W
122°41'56"W
47°38'10"N
47°37'10"N
47°36'10"N
47°35'10"N
47°34'10"N
47°33'10"N
Sub Watersheds
Port Blakely Planned Development
Incorporated Cities
DNR Hydro (water bodies)
LiDAR-Derived Hydro
Transportation
Current House Locations (approx)
CHICO DISCUSSION AREAS
CHICO URBAN CONSERVATION AREA OVERLAY
Limited Area of More Intense Rural Development
Mineral Resource (1 DU/20 Ac)
Forest Resource Lands (1 DU/40 Ac)
Interim Rural Forest (1 DU/20 Ac)
Rural Residential (1 DU/5 Ac)
Limited Areas of More Intense Rural Development
Urban Restricted (1-5 DU/Ac)
Urban Low Residential (5-9 DU/Ac)
Rural High Density Residential (1 DU/2.5 Ac)
Neighborhood Commercial (NC)
Industrial
Urban Industrial Reserve
Business Park
Parks (P)
Public Facilities
Incorporated Cities
CHICO WILDLIFE CORRIDOR
Miles
0
0.25
Sea Grant
Washington